This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1. (Cancelled)

2. (Currently Amended) [The architecture according to claim 1] An architecture for facilitating wavelength-specific and packet-switched routing comprising:

a primary metropolitan fiber ring;

a primary distribution/aggregation node in said primary metropolitan fiber ring; and

a local service domain further comprising a secondary aggregation node in communication with said primary distribution/aggregation node, wherein said primary distribution/aggregation node further comprises:

a distribution node;

an aggregation node;

a plurality of wavelength packet header readers;

a plurality of wavelength packet cross-switches in communication with said plurality of wavelength packet header readers;

a look-up table in communication with said plurality of wavelength packet header readers;

a switch controller circuit;

a bi-directional Lambda 1 to Lambda "n" converter and packet generator in communication with said plurality of wavelength packet cross-switches;

a wavelength packet cross-connect in communication with said Lambda 1 to Lambda "n" converter and packet generator; and

a remultiplexer in communication with said plurality of wavelength packet cross-switches.

3. (Original) The architecture according to claim 2, wherein said switch controller circuit switches a particular wavelength to said remultiplexer via one of

said plurality of wavelength packet cross-switches if a packet header does not match a local customer address in said look-up table.

4. (Original) The architecture according to claim 2, wherein said distribution node further comprises:

a plurality of local distribution wavelength packet switches in communication with said plurality of wavelength packet cross-switches;

a local distribution wavelength packet router in communication with said plurality of local distribution wavelength packet switches; and

a plurality of wavelength packet multiplexers in communication with said plurality of local distribution wavelength packet switches.

5. (Original) The architecture according to claim 4, wherein said local distribution wavelength packet router distributes packets to a customer's premises.

6. (Original) The architecture according to claim 4, wherein said local distribution wavelength packet router distributes specific wavelengths to a customer's premises.

7. (Original) The architecture according to claim 4, wherein said plurality of wavelength packet multiplexers is in communication with said remultiplexer.

8. (Original) The architecture according to claim 4, wherein said plurality of wavelength packet cross-switches can be controlled via a separate radio control layer.

9. (Original) The architecture according to claim 4, wherein said look-up table and said switch controller circuit assign switching sequences and output ports that correspond to a customer's premises.

10. (Original) The architecture according to claim 4, wherein said switch controller circuit governed by said look-up table sets up sequential time-slot switching.

11. (Original) The architecture according to claim 5, wherein said packets are distributed to said customer's premises via one of millimeter wave radio, fiber and free space optical communications.

12. (Original) The architecture according to claim 6, wherein said specific wavelengths are distributed to said customer's premises via one of millimeter wave radio, fiber and free space optical communications.

13. (Original) The architecture according to claim 4, wherein said plurality of wavelength packet multiplexers combine multiple sources of data, including a specific customer's wavelengths and local customer's up-stream and down-stream return path packets, back into a network compatible packet stream for distribution to a customer served by another primary distribution/aggregation node in said architecture.

14. (Original) The architecture according to claim 4, wherein packets from one customer's premises may be directed to another customer's premises via said wavelength packet cross-connect thereby bypassing transit through one of said distribution node and said aggregation node.

15. (Original) The architecture according to claim 4, further comprising:

a broadband photodetector for detecting a wavelength and data rate of customer generated data;

an optical-to-electrical device coupled to said bi-direction Lambda 1 to Lambda "n" converter and packet generator for reading packet header information; and

said bi-directional Lambda 1 to Lambda "n" converter and packet generator packetizes said customer's data and converts said packetized customer's data to a wavelength suitable for transfer through said wavelength packet cross-connect.

16. (Original) The architecture according to claim 15, wherein said wavelength packet cross-connect is in communication with said plurality of wavelength packet multiplexers and another customer.

17. (Original) The architecture according to claim 15, wherein said bi-directional Lambda 1 to Lambda "n" converter and packet generator selects wavelengths so as not to "crash" with non-available wavelengths due to use of non-available wavelengths by other components in said architecture.

18. (Original) The architecture according to claim 4, further comprising:

a broadband photodetector for detecting a wavelength and data rate of customer generated data;

an optical-to-electrical device coupled to said bi-direction Lambda 1 to Lambda "n " converter and packet generator for reading packet header information; and

said bi-directional Lambda 1 to Lambda "n" converter and packet generator packetizes said customer' s data and converts said packetized customer's data to a wavelength suitable for transfer through one of said plurality of wavelength packet multiplexers and said aggregation node.

19. (Original) The architecture according to claim 18, wherein transfer through said plurality of wavelength packet multiplexers results in said packetized customer's data traveling further down-stream through said architecture.

20. (Original) The architecture according to claim 18, wherein transfer through said plurality of wavelength packet multiplexers results in said packetized customer's data traveling further up-stream through said architecture.

21. (Original) The architecture according to claim 4, further comprising:

a broadband photodetector for detecting a wavelength and data rate of customer generated data;

an optical-to-electrical device coupled to said bi-direction Lambda 1 to Lambda "n " converter and packet generator for reading packet header information; and

said bi-directional Lambda 1 to Lambda "n" converter and packet generator converts said customer' s data to a wavelength suitable for transfer through said wavelength packet cross-connect.

22. (Original) The architecture according to claim 21, wherein said wavelength packet cross-connect is in communication with said plurality of wavelength packet multiplexers and another customer.

23. (Original) The architecture according to claim 21, wherein said bi-directional Lambda 1 to Lambda "n" converter and packet generator select wavelengths so as not to "crash" with non-available wavelengths due to use of non-available wavelengths by other components in said architecture.

24. (Original) The architecture according to claim 4, further comprising:

a broadband photodetector for detecting a wavelength and data rate of customer generated data;

an optical-to-electrical device coupled to said bi-direction Lambda 1 to Lambda "n " converter and packet generator for reading packet header information; and

said bi-directional Lambda 1 to Lambda "n" converter and packet generator converts said customer's data to a wavelength suitable for transfer through one of said plurality of wavelength packet multiplexers and said aggregation node.

25. (Original) The architecture according to claim 24, wherein transfer through said plurality of wavelength packet multiplexers results in said customer's data traveling further down-stream through said architecture.

26. (Original) The architecture according to claim 24, wherein transfer through said plurality of wavelength packet multiplexers results in said customer's data traveling further up-stream through said architecture.

27. (Original) The architecture according to claim 24, wherein said aggregation node receives wavelengths and packetized data from said bi-directional Lambda 1 to Lambda "n" converter and packet generator destined for up-stream primary distribution/aggregation nodes in said architecture.

28. (Original) The architecture according to claim 27, wherein said aggregation node optionally demultiplexes up-stream wavelengths in order to insert locally generated wavelengths and packets into an up-steam data path.

29. (Original) The architecture according to claim 10, wherein said local distribution wavelength packet router further comprises a plurality of switches that switch packets in sequential time slots to said packet's respective

customer's via one of millimeter wave radio, fiber and free space optical communications.

30. (Cancelled)

31. (Cancelled)

32. (Cancelled)

33. (Cancelled)

34. (Cancelled)

35. (Cancelled)

36. (Cancelled)